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## **FORMING OF MAIZE HYBRIDS PRODUCTIVITY AT CONDITIONS OF WESTERN FOREST-STEPPE**

The basis of current agricultural production is obtaining of high profits at lower cost. Thus, along with improving the technology of growing agricultural crops much attention is paid to optimizing production costs and studying of agricultural market state.

Corn is one of the most productive grain crops of universal purpose in the world, which is grown for food, fodder and technical needs. It is characterized by optimal ratio of productivity and economic costs of cultivation.

The production of corn grain in overall structure of agricultural production of Ukraine has become one of the segments that is intensively developing. Over the last decade the acreage under crop has more than doubled, and its yield has significantly increased.

According to the results of domestic scientific research, the production of corn grain to 20 % depends on the correct choice of hybrids in accordance with soil and climatic conditions of cultivation. Gross harvest of grain by almost 50 % is determined by hybrid genotype and only by 30 % and 20 % by agrotechnical measures and meteorological conditions.

Among many agrotechnical measures the fertilizers play a big role in the growth, development and productivity of maize hybrids.

For the formation of high yield, a sufficient supply of nutrients is required. This is due primarily to the formation of large amount of vegetative mass and assimilation of nutrients in relatively short period of intensive plant growth.

When growing corn for grain, the most important in corn feed is not amount of nutrients contributed with fertilizers, but ratio between them. Balanced nutrition allows to avoid lengthening of the second half of vegetation and promotes harvesting in optimal terms.

The results of studies (2016–2017) of fertilizer effect on productivity of maize hybrids at conditions of western Forest-Steppe are presented. It was found that application of mineral fertilizers at rate of  $N_{90}P_{60}K_{60}$  promoted the yield increase of maize hybrids grain by 28–36 %, or by 1,9–2,2 t/ha, the increase of rate to  $N_{120}P_{90}K_{90}$  increased the yield, and increment for unfertilized crops was 1,8–2,5 t/ha, or 30–38 %. On maize crops

fertilized at the rate of  $N_{90}P_{60}K_{60}$ , the mass of 1000 grains was observed to increase by 4,1–10,7 %, or by 10,5–25,5 g, the increase rate to  $N_{120}P_{90}K_{90}$  provided an increase in the range of 13,4–30,2 %, or 33,0–73,0 g.